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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,919	02/08/2001	Bradford T. Graves	47171-00265	6498
41230	7590	09/27/2004	EXAMINER	
CUMMINS-ALLISON CORP. C/O JENKENS & GILCHRIST 225 WEST WASHINGTON STREET, SUITE 2600 CHICAGO, IL 60606			DASTOURI, MEHRDAD	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/779,919	GRAVES ET AL.
	Examiner Mehrdad Dastouri	Art Unit 2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9, 13-15, 18 and 21-39 is/are rejected.
- 7) Claim(s) 10-12, 16, 17, 19 and 20 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 February 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/10/01, 5/29/01, 6/18/01 & 3/5/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities:

In Line 1 of Claim 7, the typographical error, "claim 7", should be corrected to indicate the proper dependency of this claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-9, 13-15, 18 and 21-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskowski (U.S. 5,923,413) in view of Carnes, Jr. et al. (hereinafter Carnes) (U.S. 3,976,198).

Regarding Claim 1, Laskowski discloses a doubles detection system for detecting doubled documents, the system comprising:

one or more light sources disposed on a first side of a test document (Figures 2 and 3, LEDs 32; Column 5, Lines 56-66);

one or more reflected light sensors disposed along the first side of the test document, and adapted to generate one or more reflected light signals (Figures 2 and 3, Reflectance Detectors 20; Column 6, Lines 13-21);

one or more transmitted light sensors disposed along a second side of the test document, and adapted to generate one or more transmitted light signals (Figures 2 and 3, Transmission Detectors 22; Column 6, Lines 13-21;

a memory storing one or more master reflected light values and one or more master transmitted light values (Figure 13, Memories 138; Column 19, Lines 1-11); and

a processor (Figure 13, Control Circuit 24, Processors 134) adapted to

(1) receive the reflected light signal (Column 18, Lines 44-48),
(2) generate a reflected light value for the test document (Column 18, Lines 44-48),

(3) calculate a reflectance ratio between the reflected light value of the test document and the master reflected light value (Figure 4; Column 7, Lines 51-67, Column 8, Lines 1-42; Figure 13; Column 18, Lines 66-67, Column 19, Lines 1-32),

(4) receive the transmitted light signal (Column 18, Lines 44-48),
(5) generate a transmitted light value for the test document (Column 18, Lines 44-48),

(6) adjust the master transmitted light value based on the reflectance ratio (Column 8, Lines 60-67),

(7) compare the adjusted master transmitted light value to the transmitted light value for the test document (Figure 4; Column 7, Lines 51-67, Column 8, Lines 1-67), and

(8) generate a signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that the document is unfit for use (Column 4, Lines 14-22; Column 21, Lines 23-27).

However, Laskowski does not explicitly disclose presence of more than one document as the reason to be unfit to use.

Carnes, in the same field of endeavor, disclose a method of currency (document) examination implementing the procedure of comparing light transmissivity of a test document and a predetermined stored light transmissivity of currencies (Column 2, Lines 61-67, Column 3, Lines 1-47), and further disclosing:

generating a doubles signal if the comparison of the transmitted light value with the transmitted light value for the test document indicates that more than one document is present (Column 2, Lines 5-13).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Laskowski's invention according to the teachings of Carnes to generate a doubles signal if the comparison of the adjusted master transmitted light value with the transmitted light value for the test document indicates that more than one document is present because it will expand the versatility of detection system by providing double document detection capability. This will result in increasing the system accuracy by detecting the adhesion of one document (e.g., bill) to another; the overlapping of successively fed documents at an automatic examination system, and the severe mutilation of documents being examined (Carnes; Column 2, Lines 10-18).

Regarding Claim 2, Laskowski further discloses the doubles detection system of Claim 1 wherein the adjusted master transmitted light value determines a threshold for acceptable transmitted light values (Column 9, Lines 30-64; Column 14, Lines 14-33; Column 20, Lines 53-67)..

Regarding Claim 3, Carnes further discloses the doubles detection system of Claim 2 wherein a test document having a transmitted light value lower than the threshold is determined to be a doubled document (Column 6, Lines 34-39).

Regarding Claim 4, Carnes further discloses the doubles detection of Claim 3 wherein the doubled document is off-sorted into an output receptacle (Column 6, Lines 39-53).

Regarding Claim 6, Laskowski further discloses the doubles detection system of Claim 1 wherein the master reflected light value and the master transmitted light value are determined in a learning mode (Column 20, Lines 48-52).

Regarding Claim 7, Laskowski further discloses the doubles detection of Claim 1 wherein the master reflected light value and the master transmitted light value are determined, respectively, by averaging a plurality of individual reflected light values and individual transmitted light values for a series of master documents (Column 8, Lines 9-36).

Regarding Claim 8, Laskowski further discloses the doubles detection system of claim 1 wherein the master reflected light value and the master transmitted light value are determined, respectively, by averaging a plurality of individual reflected light values

and individual transmitted light values for a series of test documents (Column 8, Lines 9-36).

Regarding Claim 9, Laskowski further discloses the doubles detection system of Claim 1 wherein calculating the reflectance ratio comprises dividing the master reflected light value by the reflected light value of the test document (Column 8, Lines 9-36, y_i is divided by σ_x). Alternatively, dividing the master reflected light value by the reflected light value of the test document is a normalization process which is a well known procedure routinely implemented in double currency detection systems (Official Notice).).

Regarding claims 13-15, 18, and 21-39, arguments analogous to those presented for Claims 1-4 and 6-9 are applicable to claims 13-15, 18 and 21-39. Laskowski further discloses the A/d converter recited in Claims 28 and 36 (Figure 13, Component 124). Currency detecting systems conventionally process 800-1200 bills per minute.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laskowski (U.S. 5,923,413) further in view of Carnes, Jr. et al. (hereinafter Carnes) (U.S. 3,976,198) and Cargill et al. (hereinafter Cargill) (U.S. 5,430,664).

Regarding claim 5, Laskowski and Carnes do not explicitly disclose the doubles detection system of Claim 1 wherein the master reflected light value and the master transmitted light value are input manually.

Cargill teaches various thresholds can be set by the user (Column 2, Line 67, Column 3, Lines 1-3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Laskowski's and Carnes combination according to the teachings of Cargill to set various thresholds by the user because it will provide a system that can react to more specific situations and thereby allow the user to limit the number of rejections and misinterpreted results.

Allowable Subject Matter

5. Claims 10-12, 16, 17, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-12, 16, 17, 19, and 20 of the instant invention recite multiplying a master transmitted light value by a reflectance ratio or its inverse, square, or squared inverse to make a determination as to the currency notes status as a double.

The features identified are neither discussed nor suggested by the prior arts of record.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,101,266 to Laskowski et al (Teaches double currency detection in addition to the teachings of primary prior art of record, U.S. 5,923,413).

U.S. Patent 6,393,140 to Itako.

U.S. Patent 6,486,464 to Ma et al.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**MEHRDAD DASTOURI
PRIMARY EXAMINER**

Mehrdad Dastouri

Mehrdad Dastouri
Primary Examiner
Group Art Unit 2623
September 25, 2004